

Notice of Allowability

Application No.

09/784,977

Examiner

Brian R. Gordon

Applicant(s)

TAKAHASHI ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 7-7-06.
2. ☒ The allowed claim(s) is/are 1,34,35,38-41,44,51,52,56,57,61 and 63-68.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Thomas Spinelli on September 22, 2006.

The application has been amended as follows:

In the claims:

Cancel non-elected claim 69

1. (Currently Amended) A liquid pipetting apparatus for dispensing a minute amount of liquid comprising:

at least one conduit member for holding the liquid therein and having a dispensing end;

a driving means;

an actuator associated with the at least one conduit member, and

a ~~voltage controller programmed~~ configured to supply voltage to the driving means to move the at least one conduit member and dispense the liquid from a dispensing end thereof when the at least one conduit member is moved in a dispensing direction by voltage applied to the actuator, temporarily stopped, and then moved in a direction opposite the dispensing direction of the liquid by a decrease in the voltage applied to the actuator, wherein dispensing substantially occurs while concurrently

moving the conduit member in the direction opposite the dispensing direction.

2-33. (Cancelled)

34. (Currently Amended) A liquid pipetting apparatus as claimed in claim 1, wherein the ~~voltage~~ controller is ~~programmed~~ configured to actuate the driving means to accelerate the at least one conduit member in the dispensing direction at a first magnitude and in the direction opposite to the dispensing direction at a second magnitude.

35. (Previously Presented) A liquid pipetting apparatus as claimed in claim 34, wherein the first magnitude of acceleration is less than the second magnitude of acceleration.

36 and 37. (Cancelled)

38. (Currently Amended) A liquid pipetting apparatus as claimed in claim [[37]] 1, wherein after being moved in the direction opposite to the dispensing direction of the liquid, the ~~voltage~~ controller is ~~programmed~~ configured to actuate the driving means to move the at least one conduit member to a specific position in order to dispense the liquid held within the at least one conduit member from one end thereof.

39. (Currently Amended) A liquid pipetting apparatus as claimed in claim [[37]] 1, wherein the ~~voltage~~ controller is ~~programmed~~ configured to actuate the driving means for ~~such that~~ the at least one conduit member ~~repeats~~ to repeat the movement ~~to~~ in the dispensing direction of the liquid and the movement in the direction opposite to

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the dispensing direction of the liquid.

40. (Currently Amended) A liquid pipetting apparatus as claimed in claim 1, wherein the liquid is held in the at least one conduit member before the voltage controller actuates the driving means to move ~~moves~~ the at least one conduit member in the direction opposite to the dispensing direction of the liquid.

41. (Previously Presented) A liquid pipetting apparatus as claimed in claim 1, further comprising a washing means capable of washing the at least one conduit member.

42-43. (Cancelled)

44. (Previously Presented) A liquid pipetting apparatus as claimed in claim 41, wherein the washing means contains a pump for sending to the at least one conduit member a cleaning solution capable of washing the at least one conduit member.

45-50. (Cancelled)

51. (Previously Presented) A liquid pipetting apparatus as claimed in claim 1, wherein the at least one conduit member holds the liquid in the inside thereof and contains a dispensing vent at a distal end thereof to dispense the liquid held in the at least one conduit member through the dispensing end.

52. (Previously Presented) A liquid pipetting apparatus as claimed in claim 51, wherein an inner portion of the at least one conduit member has a taper

shape, of which the cross-sectional area becomes smaller as the inner portion approaches the dispensing vent.

53. (Cancelled)

54. (Previously Presented) A liquid pipetting apparatus as claimed in claim 1, wherein the actuator includes a piezoelectric element.

55. (Cancelled)

56. (Previously Presented) A liquid pipetting apparatus as claimed in claim 1, wherein the at least one conduit member is connected to the actuator detachably.

57. (Currently Amended) A liquid ~~pipetting~~ pipetting apparatus as claimed in claim 1, wherein the at least one conduit member comprises a plurality of conduit members.

58-60. (Cancelled)

61. (Currently Amended) A liquid dispensing method for dispensing a minute amount of liquid from one end of at least one conduit member for holding the liquid, comprising:

providing the liquid pipetting apparatus of claim 1;

holding the liquid in the at least one conduit member; and

dispensing the liquid held in the at least one conduit member from one

end thereof, when the conduit member is moved in ~~[[a]]~~ the direction opposite to ~~[[a]]~~ the dispensing direction of the liquid by a the decrease in voltage applied to ~~[[an]]~~ the actuator associated with the at least one conduit member.

62. (Cancelled)

63. (Previously Presented) A liquid dispensing method as claimed in claim 61, further including stopping the conduit member between moving the conduit member in a dispensing direction of the liquid and moving the conduit member in the direction opposite the dispensing direction of the liquid.

64. (Previously Presented) A liquid dispensing method as claimed in claim 61, further including moving the at least one conduit member in the dispensing direction of the liquid and wherein after being moved in the dispensing direction of the liquid, the at least one conduit member is moved in the opposite direction to the dispensing direction of the liquid.

65. (Previously Presented) A liquid dispensing method as claimed in claim 64, wherein at the time that the at least one conduit member moves in the dispensing direction of the liquid and at the time that the at least one conduit member moves in the direction opposite to the dispensing direction of the liquid the acceleration of the at least one conduit member is different in magnitude.

66. (Previously Presented) A liquid dispensing method as claimed in claim 65, wherein an acceleration in the at least one conduit member at the time the at

least one conduit member is moved in the direction opposite to the dispensing direction of the liquid is larger than an acceleration at time the at least one conduit member is moved in the dispensing direction of the liquid.

67. (Previously Presented) The method of claim 61, further comprising washing the at least one conduit member after the at least one conduit member is moved in the direction opposite to the dispensing direction of the liquid.

68. (Previously Presented) The method of claim 61, further comprising washing the at least one conduit member after the at least one conduit member is moved in the direction opposite to the dispensing direction of the liquid.

69. (Cancelled)

Conclusion


2. Claims 1, 34-35, 38-41, 44, 51-52, 56-57, 61, and 63-68 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Gordon whose telephone number is 571-272-1258. The examiner can normally be reached on M-F, with 2nd and 4th F off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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